

## **Abstracts and Proceedings Papers**

Monitoring the Consistency of Multiphase Waste Forms

W. L. Ebert, M. A. Lewis, and S. G. Johnson

Proc. of the Am. Nucl. Soc. 2001 Winter Meeting, Reno, NV,  
November 11ñ15, 2001, Vol. 85, Paper No. 3, CD-ROM, Track 6:  
Advances in Treatment of High-Level Wastes (2001)

Precipitation of Crystalline NpO<sub>2</sub> During Oxidative Corrosion of Neptunium-Bearing Uranium Oxides

R. J. Finch

Abstracts, Mater. Res. Soc. Fall Meeting, Symp. JJ, Boston, MA,  
November 26ñ30, 2001 (2001)

Corrosion of Stainless Steels by Lead-Based Reactor Coolants

L. Leibowitz, V. A. Maroni, S. M. McDeavitt, A. G. Raraz, A. J. Kropf

Proc. of the Am. Nucl. Soc. Winter Meeting, Reno, NV, November 11ñ15,  
2001 (2001)

Solvent Recovery from Aqueous Effluents Using a Centrifugal Contactor

H. A. Arafat and R. A. Leonard

Abstracts, the 12<sup>th</sup> Symp. on Separation Science and Technology for  
Energy Applications, Gatlinburg, TN, October 15ñ18, 2001, p. 95 (2001)

Analysis of InSb Electrode Phase Conversion by *In Situ* X-Ray Absorption Spectroscopy

C. S. Johnson, A. J. Kropf, H. Tostmann, J. T. Vaughn, and M. M. Thackeray

Abstracts, Poster, 11<sup>th</sup> Users Meeting for the Advanced Photon Source,  
Argonne, IL, October 9ñ11, 2001 (2001)

Experimental Verification of Caustic-Side Solvent Extraction for Removal of Cesium  
from Tank Waste

R. A. Leonard, S. B. Aase, H. A. Arafat, D. B. Chamberlain, C. Conner, M. C.  
Regalbuto, and G. F. Vandegrift

Abstracts, the 12<sup>th</sup> Symp. on Separation Science and Technology for  
Energy Applications, Gatlinburg, TN, October 15ñ18, 2001, p. 50 (2001)

Impedance Rise in LiNi<sub>0.8</sub>Co<sub>0.2</sub>O<sub>2</sub> High Power Batteries

K. Amine, C. H. Chen, J. Liu, D. P. Abraham, Y. Hyung, M. Stoll, D. R. Vissers,  
and G. L. Henriksen

Extended Abstracts, Lithium Ion and Polymer Battery Workshop, Seoul,  
Korea, September 1ñ7, 2001 (2001)

The Benefits and Challenges of Advanced Automotive Power Sources Being Supported by the U. S. Department of Energy

S. G. Chalk, W. F. Podolski, and W. Key

Proc. of the 13<sup>th</sup> Int. Conf.: Internal Combustion Engine versus Fuel Celló Potential and Limitations as Automotive Power Sources, Graz, Austria, September 6ñ7, 2001, pp. 38ñ57 (2001)

Effect of Aluminum Doping on Impedance of Lithium-Ion Cells during Calendar Life Storage

B. Chen, J. Liu, and K. Amine

Extended Abstract, Joint Int. Meeting of the Electrochem. Soc. and the Int. Soc. of Electrochemistryó San Francisco, CA, September 2ñ7, 2001, Vol. 2001ñ2, No. 176 (2001)

Results of Diagnostic of Lithium Ion Batteries after Accelerated Cycle and Calendar Life Test

C. H. Chen, G. L. Henriksen, J. Liu, J. Luo, I. Bloom, D. R. Vissers, and K. Amine

Extended Abstracts, Joint Int. Meeting of the Electrochem. Soc. and the 52<sup>nd</sup> Meeting of the Int. Soc. of Electrochemistry, San Francisco, CA, September 2ñ7, 2001, Vol. 2001ñ2, No. 273 (2001)

Liquid Range of Binary Solvents of Common Carbonates for Lithium Batteries

M. S. Ding, K. Xu, S. S. Zhang, J. Allen, T. R. Jow, K. Amine and G. L. Henriksen

Extended Abstracts, Joint Int. Meeting of the Electrochem. Soc. and the Int. Soc. of Electrochemistry, San Francisco, CA, September 2ñ7, 2001, Vol. 2001-2, No. 117 (2001)

Fuel-Flexible Automotive Fuel Cell Power System

W. E. Ernst, W. F. Podolski, and D. L. Ho

Proc. of the SAE Transactions, J. Fuels Lubricants, September 2001, ISBN 0-7680-0843-3, Paper 200-01-1530 (2001)

An *In-Situ* X-Ray Absorption Spectroscopy Study of InSb Electrodes in Lithium Batteries

A. J. Kropf, H. Tostmann, C. S. Johnson, J. T. Vaughey, and M. M. Thackeray  
Abstracts, 200<sup>th</sup> Meeting of the Electrochem. Soc., San Francisco, CA, September 2ñ7, 2001, Vol. 2001ñ2, No. 260 (2001)

**Electrochemical Behavior of Surface-Modified Natural Graphite for High-Power Applications**

J. Liu, C. H. Chen, J. Luo, D. P. Abraham, D. R. Vissers, and K. Amine  
Joint Int. Meeting of the Electrochem. Soc. and the Int. Soc. of  
Electrochemistry, San Francisco, CA, September 2ñ7, 2001, Vol. 2001ñ2,  
No. 226 (2001)

**Electrochemical and Thermal Behavior of Metal Coated Natural Graphite (MAG)**

W. Lu, S. Donepudi, J. Prakash, J. Liu, and K. Amine  
Extended Abstracts, Joint Int. Meeting of the Electrochem. Soc. and the  
Int. Soc. of Electrochemistry, San Francisco, CA, September 2ñ7, 2001,  
Vol. 2001ñ2, No. 227 (2001)

**Diffusional Transformations of InSb Electrodes in Lithium Cells**

T. Sarakonsri, S. A. Hackney, C. S. Johnson, J. T. Vaughey and M. M. Thackeray  
Abstracts, 200<sup>th</sup> Meeting of the Electrochem. Soc., San Francisco, CA,  
September 2ñ7, 2001, Vol. 2001ñ2, No. 253 (2001)

**Prediction of Reduction and Oxidation Potentials with Ab Initio Methods, and an Evaluation of Reduction Mechanisms for Alkyl Carbonates**

J. M. Vollmer, L. A. Curtiss, C. H. Chen, D. R. Vissers and K. Amine  
Extended Abstracts, Joint Int. Meeting of the Electrochem. Soc. and the  
Int. Soc. of Electrochemistry, San Francisco, CA, September 2ñ7, 2001,  
Vol. 2001ñ2, No. 103 (2001)

**Fuels Processing for Small Fuel Cell Systems**

M. Krumpelt, S. Ahmed, T. R. Krause, R. Kumar, and J. P. Kopasz  
Proc. of the Am. Chem. Soc. 222<sup>nd</sup> National Meeting, Chicago, IL,  
August 26ñ30, 2001, Preprints of Symp., Vol. 46, No. 2, p. 631 (2001)

**Water-Gas Shift Catalysts with Improved Durability of Automotive Fuel Cell Applications**

D. J. Myers, J. Krebs, T. R. Krause, and J. D. Carter  
Preprints of the Division of Fuel Chemistry Symp., 222<sup>nd</sup> Am. Chem. Soc.  
National Meeting, Chicago, IL, August 26ñ30, 2001, Vol. 46, No. 2, pp.  
676ñ677 (2001)

**Calendar-Life and Cycle-Life Studies of Advanced Technology Development Program, Generation 1 Lithium-Ion Batteries**

R. B. Wright, C. G. Motloch, J. R. Belt, J. P. Christophersen, C. D. Ho, R. A. Richardson, I. Bloom, S. A. Jones, V. S. Battaglia, G. L. Henriksen, T. Unkelhaeuser, D. Ingersoll, H. L. Case, and S. Rogers  
Proc. of Workshop on Development of Advanced Battery Engineering Models, Washington, DC, August 14ñ16, 2001 (2001)

Development of Fuel Processors for Polymer Electrolyte Fuel Cell Systems at Argonne National Laboratory

J. P. Kopasz, R. K. Ahluwalia, S. Ahmed, J.-M. Bae, J. D. Carter, E. D. Doss, T. R. Krause, J. Krebs, M. Krumpelt, R. Kumar, S. H. D. Lee, D. J. Myers, C. Pereira, and X. Wang

Proc. of the First European Polymer Electrolyte Fuel Cell Forum,  
Eds. F. Buchi, G. G. Scherer, and A. Wokaun, Lucerne, Switzerland,  
July 2ñ6, 2001, European Fuel Cell Forum, p. 407 (2001)

Lithium Insertion Reactions in Intermetallic Electrodes

J. T. Vaughey, C. S. Johnson, L. Fransson, A. J. Kropf, H. Tostmann, R. Benedek, K. Edstrom, J. O. Thomas, and M. M. Thackeray

Abstracts, Int. Conf. on Materials for Advanced Technologies, (ICMAT 2001), Mater. Res. Soc., Singapore, July 1ñ6, 2001, No. A7-01-IN, p. 27 (2001)

Evaluation of Potential Cathode Materials for SOFC Operation between 500ñ800°C

J. M. Ralph, J. T. Vaughey, and M. Krumpelt

Proc. of the Seventh Int. Symp. on Solid Oxide Fuel Cells, Tsukuba, Japan, June 3ñ8, 2001, Eds. H. Yokokawa and S. C. Singhal, the Electrochem. Soc., PV 2001ñ16 (2001)

Cause of Power Fade in Lithium Ion Batteries

K. Amine, J. Liu, C. H. Chen, J. S. Luo, D. R. Vissers, and G. L. Henriksen  
Extended Abstracts, Int. Meeting on Lithium Batteries, Arcachon, France, May 2001, No. 32 (2001)

Challenges in Reforming Gasoline: All Components Are Not Created Equal

J. P. Kopasz, S. Ahmed, M. Krumpelt, and P. Devlin

Proc. of the Soc. of Automotive Engineers Fuels and Lubricants Meeting, Orlando, FL, May 7ñ9, 2001, SAE Technical Paper Series, 2001-01-1915 (2001)

Fundamental Studies of Ceramic/Metal Interfacial Reactions at Elevated Temperatures

S. M. McDeavitt, G. W. Billings, and J. E. Indacochea

Proc. of the 6<sup>th</sup> Int. Conf. on Brazing, High Temperature Brazing and Diffusion Welding, Lectures, and Posters, Aachen, Germany, May 8ñ10, 2001, Ed. E. Lugscheider, German Welding Soc., Dusseldorf, Germany, pp. 189ñ194 (2001)

Layered (1-x)Li<sub>2</sub>MnO<sub>3</sub>•xLiMO<sub>2</sub>(M=Ni, Co, Cr. or Mn) Electrodes for Lithium Batteries

M. M. Thackeray and C. S. Johnson

Abstracts, Lithium Battery Discussion Workshop Meeting, Institute for Chemistry on Condensed Materials of Bordeauxó CNRS, Bordeaux, Aracachon, France, May 27ñJune 1, 2001, No. 78 (2001)

An HLW Glass Degradation Model for TSPA-SR

W. L. Ebert and J. C. Cunnane

Proc. of the 9th Int. High-Level Radioactive Waste Management Conf.,  
Las Vegas, NV, April 29ñMay 3, 2001, CD-ROM, Section I-10 (2001)

<sup>129</sup>I Release Fractions in Unsaturated Tests with Fast-Flux MOX Fuels

P. A. Finn, Y. Tsai, and M. M. Goldberg

Proc. of the 9th Int. High-Level Radioactive Waste Management Conf.,  
Am. Nucl. Soc., Las Vegas, NV, April 29ñMay 3, 2001 (2001)

Recent Advances in Electrode Materials for Lithium Batteries

M. M. Thackeray, J. T. Vaughey, and C. S. Johnson

Abstracts, 221<sup>st</sup> Am. Chem. Soc. National Meeting, San Diego, CA, April  
1ñ5, 2001, No. 609 (2001)

Stabilization of Transition Metal Oxides for Lithium Batteries

A. J. Kahaian, C. S. Johnson, M. M. Thackeray and K. D. Kepler

Abstracts, Int. Battery Association Symp. Conf., Kwa-Maritane,  
Pilansberg National Park, South Africa, March 11ñ14, 2001, p. 31 (2001)

Intermetallic Electrodes for Lithium Batteries: The Significance of Face-Centered-Cubic Structures

M. M. Thackeray, J. T. Vaughey, C. S. Johnson, R. Benedek, L. Fransson,  
E. K. Edstrom, and J. O. Thomas

Abstracts, 18<sup>th</sup> Int. Seminar & Exhibit on Primary & Secondary Batteries,  
Ft. Lauderdale, FL, March 5ñ8, 2001, (2001)

Neptunium Incorporation in Uranium(VI) Compounds formed During the Aqueous Corrosion of Neptunium-Bearing Uranium Oxides

R. J. Finch, E. C. Buck, and S. F. Wolf

Abstracts, Mater. Res. Soc. Fall Meeting, Symp. JJ, Boston, MA,  
November 26ñ30, 2001 (2001)

Modeling Neptunium Concentrations in a Breached Waste Package with Commercial Spent Nuclear Fuel

R. J. Finch, and J. C. Cunnane

Proc. of the 9th Int. High-Level Radioactive Waste Management Conf.,  
Am. Nucl. Soc., Las Vegas, NV, April 29ñMay 3, 2001 (2001)

XAFS Spectra of Rare Earth Elements in Synthetic Zircon

R. J. Finch, A. J. Kropf, and J. M. Hanchar

Abstracts, 11<sup>th</sup> Annual V. M. Goldschmidt Conf., May 20ñ24, 2001, CD-ROM No. 3791, Contribution No. 1088, Lunar and Planetary Institute,  
Houston, TX (2001)

Strain-Limited Rare-Earth Element Incorporation in Zircon

J. M. Hanchar, R. J. Finch, P. W. O. Hoskin, and E. B. Watson  
Abstracts, 11<sup>th</sup> Annual V. M. Goldschmidt Conf., May 20ñ24, 2001, CD-ROM No. 3712, Contribution No. 1088, Lunar and Planetary Institute, Houston, TX (2001)

Towards a Better Understanding of Rare Earth Element Partition Coefficients in Zircon

J. M. Hanchar, R. J. Finch, E. B. Watson, and P. W. O. Hoskin  
Abstracts, European Union of Geochemistry Annual Meeting, Strasbourg, France, April 8ñ12, 2001, p. 677 (2001)

Layered (1-x)Li<sub>2</sub>MnO<sub>3</sub>•xLiMnO<sub>2</sub>(M=Ni, Co, Cr, or Mn) Electrodes for Lithium Batteries  
C. S. Johnson and M. M. Thackeray

Proc. of the Electrochem Soc. Int. Workshop on Electrochemical Systems, Interfaces, Phenomena, and Nanostructures in Lithium Batteries, Eds. A. R. Landgrebe and R. J. Klingler, Vol. PV 2000-36, pp. 47ñ60 (2001)

Discussion on the Use of Matrix Diffusion Model After a Multidisciplinary Study of a Granitic Boulder Sample

N. Marcos, M. Siitari-Kauppi, J. Suksi, K. Rasilainen, R. J. Finch, E. Flitsiyan, and K.-H. Hellmuth  
Mater Res. Soc. Symp. Proc. **663**, pp. 1053ñ1063 (2001)

Lithium-Ion Conducting Channel

L. G. Scanlon, L. R. Lucente, W. A. Feld, G. Sandi, D. J. Campo, A. E. Turner, C. S. Johnson, and R. A. Marsh  
Proc. of the Electrochem. Soc. Int. Workshop on Electrochemical Systems, Interfaces, Phenomena, and Nanostructures in Lithium Batteries, Eds. A. R. Landgrebe and R. J. Klingler, Vol. PV 2000-36, pp. 326ñ339 (2001)

Intermetallic Negative Electrodes for Lithium Batteries

M. M. Thackeray, J. T. Vaughey, C. S. Johnson, A. J. Kropf, H. Tostmann, R. Benedek, A. J. Kahaian, T. Sarakonsri, and S. A. Hackney  
Proc. of the Electrochem. Soc. Int. Workshop on Electrochemical Systems, Interfaces, Phenomena, and Nanostructures in Lithium Batteries, Eds. A. R. Landgrebe and R. J. Klingler, Vol. PV 2000-36, pp. 92ñ101 (2001)

A Vertical Transfer Lock for Large Gloveboxes

D. E. Preuss, A. A. Frigo, and R. F. Malecha  
Proc. of the 13<sup>th</sup> Annual Conf. of the Am. Glovebox Soc., New Orleans, LA, August 21-23, 2000, CD ROM (2001)

The ACT External HEPA Push-Through Filter Assembly

A. A. Frigo, S. G. Wiedmeyer, D. E. Preuss, E. F. Bielick, and R. F. Malecha

Proc of the 13th Annual Conf. and Equipment Exhibit of the Am.

Glovebox Soc., New Orleans, LA, August 21-23, 2000, CD ROM (2001)

The Evolution of CMT Gloveboxes

R. F. Malecha, A. A. Frigo, and D. E. Preuss

Proc. of the 13<sup>th</sup> Annual Conf. and Equipment Exhibit of the Am.

Glovebox Soc.,

New Orleans, LA, August 21-23, 2000, CD ROM (2001)